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Scientific Evidence and the Ethical Obligations of Attorneys

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SCIENTIFIC EVIDENCE AND THE ETHICAL OBLIGATIONS OF ATTORNEYS

MICHAEL J. SAKS¹

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This article considers the question: “What are the legal and ethical responsibilities of attorneys when offering scientific expert evidence to courts?” To a lesser extent it considers the responsibilities of attorneys to challenge such evidence when proffered and the ethical dimensions of the working relationship of lawyers and experts. Although the most prominent discussions of such issues have concerned so-called junk science in civil trials,² the legal context upon which this article will focus is the criminal trial, where dubious science is more common,³ less questioned,⁴

¹Professor of Law, Arizona State University. Ph.D. (1975) Ohio State University; M.S.L. (1983) Yale Law School. Portions of this article are based on portions of the author’s chapter, *Ethical Standards of and Concerning Expert Witnesses*, in *MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY* (2d ed.) (David Faigman, David Kaye, Michael Saks & Joseph Sanders eds., 2002).

²See PETER HUBER, *GALILEO’S REVENGE* (1991); KENNETH R. FOSTER & PETER W. HUBER, *JUDGING SCIENCE* (1997).

³Michael J. Saks, *Merlin and Solomon: Lessons from the Law’s Formative Encounters with Forensic Identification Science*, 49 *HASTINGS L. J.* 1069 (1998).

⁴D. Michael Risinger, *Navigating Expert Reliability: Are Criminal Standards of Certainty Being Left on the Dock?*, 64 *ALBANY L. REV.* 99 (2000) (concluded:

We have seen that, on their face, the numbers seem to indicate that civil defendants have benefitted greatly from *Daubert* but that criminal defendants have not. This seems especially true in regard to what might be called non-science forensic science,

and has even become institutionalized. The rules and practices of civil cases are provided for the illuminating contrasts they provide.

I. EMERGING CHALLENGES TO FORENSIC SCIENCE

Two events have converged to bring into question some or much of the forensic science that has been offered to courts in criminal trials for much of the past century.

One of those is an unexpectedly revolutionary change in the law governing the admissibility of scientific evidence, namely, the *Daubert* family of cases, a series of U.S. Supreme Court opinions in which all of the major holdings were decided unanimously.⁵ In 1993 in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,⁶ the Court held, contrary to most of the circuits, that the admissibility of scientific expert testimony did not turn on whether the expert community in question agreed among themselves that they were in possession of dependable knowledge, but on whether the putative knowledge could be demonstrated to be valid, and that this gatekeeping responsibility was not limited to “novel” proffers.⁷ Four years later in *General Electric Co. v. Joiner*,⁸ the Court held that the standard of review for admissibility decisions under *Daubert* was the deferential “abuse of discretion” standard and that a reasonably tight logic had to connect the expert’s premises and conclusions. Two years later in *Kumho Tire Co., Ltd. v. Carmichael*,⁹ the Court decided a third case addressing the extent and nature of judicial gatekeeping of expert testimony. *Kumho Tire* presented the question of whether the rigorous scrutiny called for by *Daubert*¹⁰ applies only to science, or whether it extends to other kinds of expert testimony, namely, “technical or other specialized” evidence.¹¹ The Court held that all proffered expert evidence, regardless of whether it is “scientific,” “technical,” or “other,” must be demonstrated to be valid or must be denied admission.¹²

and it appears to be attributable partly to the inertia of courts, but at least as much to the criminal defense bar’s failure to construct sophisticated challenges and develop the evidence to support them.).

⁵For a discussion of what problems in scientific evidence these opinions create as well as solve, see Michael J. Saks, *The Aftermath of Daubert: An Evolving Jurisprudence of Expert Evidence*, 40 JURIMETRICS J. 229 (2000).

⁶509 U.S. 579.

⁷*Id.* at 597.

⁸522 U.S. 136 (1997).

⁹526 U.S. 137 (1999).

¹⁰Oddly enough, most courts have been slow to realize that in many situations *Daubert* requires more stringent oversight than the “general acceptance” test of *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923). A number of fields that easily had gained entry under *Frye* have found themselves at increased risk of exclusion under *Daubert*. This seeming paradox is largely a consequence of courts accepting at face value what *Daubert* said about the test it created, rather than looking at what the test does. See Saks, *supra* note 3.

¹¹See FED. R. EVID. 702.

¹²The Court realized that the criteria would differ from one kind of expertise to another. For a thoughtful discussion of different types of expertise and the different kinds of scrutiny that will be needed for them, see D. Michael Risinger, *Preliminary Thoughts on a Functional Taxonomy of Expertise for the Post-Kumho World*, in MODERN SCIENTIFIC EVIDENCE: THE

Many lower courts and commentators did not immediately realize that these decisions sometimes created more rigorous gatekeeping requirements than what the courts were accustomed to (and sometimes created less rigorous requirements). The explanation of when they do and when they don't and why is not difficult. (Table 1 will assist the reader with the following explanation.) The *Frye* test determines whether a proposition enjoys general acceptance in the relevant field or fields. The *Daubert* test poses the question whether the proposition is valid. In most instances, these two different questions will produce the same result. When a proposition has a valid foundation it is likely to enjoy general acceptance, and either test will result in admission. When a proposition has a weak scientific foundation it is likely to be low in general acceptance, and either test will result in exclusion. But in some circumstances the two tests will produce different results. For example, cutting-edge science will be more readily admitted by *Daubert* than by *Frye* when the science is strong but there has been insufficient time for the wider field to learn about it and come to "generally accept" it. On the other hand, when propositions have gained general acceptance within a field even though their scientific underpinnings are untested, weakly supported, or have been found to be incorrect, the *Frye* test would admit expert testimony on such beliefs while *Daubert* would exclude the testimony. Forensic science falls into that latter category: widely accepted beliefs that have been subjected to little if any systematic testing, or which continue to be accepted within their field despite testing which reveals them to be doubtful.

Table 1. A Comparison of Two Tests of Admissibility of Expert Evidence

	Daubert/Kumho: Valid Foundation	
Frye: General Acceptance	Strong	Weak
High	Both admit	Frye admits Daubert excludes
Low	Frye excludes Daubert admits	Both exclude

Moreover, the language of Rule 702 has recently been amended in order to make even more clear the (sometimes) tighter requirements implicit in the Supreme Court's holding in *Daubert*. Thus, the Federal Rules of Evidence confront old and unquestioned forensic sciences with a finer filter than they had ever been tested by previously.

The second important event is the wave of DNA exonerations. If the criminal justice community and the public were startled to learn that numerous innocent people were convicted of serious crimes and sentenced to long terms of imprisonment and sometimes even to execution, they will be even more surprised to learn that forensic science has played a large part in those erroneous convictions. Table 2 summarizes types of evidence which apparently led to the original convictions which eventually were vacated in the light of exculpatory DNA

LAW AND SCIENCE OF EXPERT TESTIMONY § 2 (David Faigman, David Kaye, Michael Saks & Joseph Sanders eds., 2d ed. 2002).

evidence. The incidence of forensic science error appears to be second only to the incidence of errors caused by eyewitness error.¹³

Table 2. Factors Leading to Wrongful Conviction¹⁴

<u>Factor</u>	<u>% of cases occurring in</u>
Eyewitness errors	71
Forensic science errors	63
Police Misconduct	44
Prosecutorial misconduct	40
Poor lawyering by defense counsel	28
False confessions	19
False information from informants	17
False witness testimony	17

Table 2 does not include fraudulent forensic science expert testimony, but only apparently honest errors. In the realm of fraudulent testimony, however, these data suggest forensic science has no peer. One fourth of the cases involved some kind of fraudulent forensic science. Forensic scientists have been caught forging the fingerprints of innocent suspects on crime scene evidence, reporting the “results” of tests never performed, reporting inculpatory results when the tests were exculpatory, inventing tests that only they can perform, or exaggerating the capabilities of tests to

¹³These numbers are, of course, changing all the time, not only because new DNA (and sometimes non-DNA) exoneration cases emerge, but because of changes in legal procedure and an evolving understanding of what went wrong in the original trials. Thus, the wide promulgation of scientifically based guidelines for improved eyewitness identification procedures, UNITED STATES DEPARTMENT OF JUSTICE, EYEWITNESS EVIDENCE: A GUIDE FOR LAW ENFORCEMENT (1999), is expected to reduce the incidence of erroneous eyewitness identifications. Similarly, as microscopic hair identification declines in use, false positive forensic science errors will decline (because errors in hair identification were the leading cause of erroneous convictions). On the other hand, crimes involving handwriting identification are not prominent on this list not because handwriting identification does not lead to errors, D. Michael Risinger, Mark P. Denbeaux & Michael J. Saks, *Exorcism of Ignorance as a Proxy for Rational Knowledge: The Case of Handwriting Identification “Expertise,”* 137 U. PA. L. REV. 731 (1989), but because forgery and other crime related writing often do not involve DNA. As we delve more deeply into the role of forensic science in these erroneous convictions, we are likely to find that some false convictions involving biological markers (pre-DNA typing) were not categorically erroneous, but merely included the defendant in a pool of candidate perpetrators, evidence which did not pinpoint the defendant but added to the accumulated evidence of the case. On the other hand, we may find that the experts offering such evidence overstated its diagnosticity, so that the “error” was not so much a matter of erroneous science but exaggerated math (that is, exaggerated characterization of the diagnosticity of the inferences that can be drawn).

¹⁴ These data are drawn from a database of DNA exoneration cases maintained by The Innocence Project, Inc., at Cardozo Law School. They should be regarded as preliminary for the reasons discussed in note 13, *supra*.

make them more conclusive than they are or more consistent with other evidence in the case.¹⁵

II. ETHICAL ISSUES

Fraud by expert witnesses is the least subtle of the ethical problems we will examine. Far more challenging are the difficulties of assessing the validity of sincere but questionable science, whether lawyers or only courts bear the burden of those assessments, and determining the ethical obligations that accompany such assessments.

A. *Fraud by Charlatans and by Genuine Experts*

Where a proffered expert knows himself or herself to be a quack or otherwise to be offering false testimony, the situation is like that of any other witness who is perpetrating a fraud on the court. Such acts are illegal as well as unethical.¹⁶ A more ambiguous version of this is the proffered expert who comes from a field that has valid knowledge and is capable of doing sound work, but in the case at bar the expert has failed to perform according to the expected standards (“with the same intellectual rigor,” as some courts and commentators have put it) and that looseness has produced less reliable results (which presumably leads to conclusions that tilt the testimony further in the direction of the proponent’s preferred position).¹⁷

For the purposes of the present discussion, the interesting questions in these situations emerge from the lawyer’s responsibilities in calling such witnesses to the stand. If the lawyer knows the testimony is invalid or fraudulent, the lawyer’s obligation is to prevent the witness’s testimony from entering the court.¹⁸ But to what

¹⁵See Paul C. Giannelli, *The Abuse of Scientific Evidence in Criminal Cases: The Need for Independent Crime Laboratories*, 4 VA. J. SOC. POL’Y & L. 439 (1997). See also UNITED STATES DEPARTMENT OF JUSTICE, THE FBI LABORATORY: AN INVESTIGATION INTO LABORATORY PRACTICES AND ALLEGED MISCONDUCT IN EXPLOSIVES-RELATED AND OTHER CASES (April 1997), available at www.usdoj.gov/oig/fbilab1/fbil1toc.htm.

¹⁶That is not to say that police, prosecutors or courts find it easy to prosecute or convict the perpetrators of such frauds, though one might have expected the courts to take severe umbrage at those who abused the courts’ and the public’s trust. West Virginia’s difficulties bringing Fred Zane to account is one example.

¹⁷Some courts and commentators, apparently in search of an easier test of junk science than *Daubert* articulates, have focused on the notion that if the expert at bar performs at the same level that people in his field operate at in matters outside of court, then all will be well. See, e.g., J. Brook Latham, *The “Same Intellectual Rigor” Test Provides an Effective Method for Determining the Reliability of All Expert Testimony, Without Regard to Whether the Testimony Comprises “Scientific Knowledge” or “Technical or Other Specialized Knowledge,”* 28 U. MEMPHIS L. REV. 1053 (1998). The failure to perform up to par certainly can be one reason for undependable expert testimony, but it is far from the only reason expert evidence can lack validity. The flaw in the reasoning of those cases which, and commentators who, have become enamored of the “same intellectual rigor test” can be made obvious with one word: astrology.

¹⁸There are several complex and debatable exceptions to the prohibition on false or misleading testimony, but they need not delay us since they are inapplicable to expert witnesses.

extent is the lawyer obligated to investigate and ensure that the expert is not a charlatan and that the testimony in the particular case is not fraudulent? Is it sufficient for the lawyer to accept the asserted expert's claims about himself, the field, and the particular testimony?

The ethical rules governing the offering of witnesses at trial are generally written to prohibit the knowing perpetration of a fraud on the court. For ordinary fact witnesses this makes obvious good sense. It generally would be difficult or impossible for an attorney to develop sufficient independent knowledge of the facts of a case to be in a position to decide which witnesses are telling the truth and which are not. After all, the witnesses typically are the source of whatever knowledge there is about a disputed event. In the instance of expert witnesses who are charlatans or who are genuine experts but who are lying about the tests performed or the results of those tests, the attorney's obligation arguably parallels the situation with lay witnesses. Assuring that the expert's qualifications and background are what they are asserted to be and that the materials upon which the expert worked, if any, satisfy the requirements of authentication, is comparable to the obligation to assure that the necessary foundation for a lay witness is present, such as that the witness had personal knowledge of the facts to be testified about. Indeed, one would think that a competent lawyer would want to research this in the expectation that the attorney on the other side is doing so. As to whether the witness is going to tell lies on the stand, the situation of the lay witness and the expert witness are almost indistinguishable: the attorney may detect contradictions, but is in not in a position to know the content of what the witness did or did not observe. Thus, so long as the attorney is reasonably diligent and does not seek to remain knowingly ignorant about facts that would disclose whether a fraud was occurring, the attorney cannot be faulted if a witness, including a scientific expert witness, lies to the attorney and then to the court.¹⁹

B. The Sincere Expert with Poor Science

Quite a different situation presents itself when the expertise is dubious, but the expert does not recognize or appreciate the weaknesses of his field's foundations. This is the situation with some forensic science. While at first blush this state of affairs might seem to insulate the proffering attorney even more than the situation described in the preceding subsection, further thought suggests otherwise.

Any attorney, like any intelligent citizen, who takes the time and effort to research a purported scientific subject has the potential to reach her own conclusions about whether or not the field's beliefs rest on a foundation of data and logic that is solid, soft, mushy, or non-existent. It is hard to think of principled reasons why an attorney should not be obligated to acquire a good faith basis for believing either that the proffered expertise is valid or that the specific facts or skills brought to bear on the task-at-hand in the trial are valid as a precondition for ethically offering such expert evidence to a court.²⁰ Reasons of practicality and efficiency, but not principle,

¹⁹We have quite a different situation where police and prosecutors sought out the services of Fred Zane after he was found out to be a charlatan and a fraud and he fled to another state, yet they continued to send work to him. See Giannelli, *supra* note 15.

²⁰The argument that it is too time consuming or difficult for the attorney to become conversant with the subject matter fails because, once in court, especially in a *Daubert* hearing, the attorney will have the burden of rationally educating and persuading the judge

might justify exempting the proponent of scientific evidence from the obligation to know whether the evidence is valid. The argument would be that it is inefficient and burdensome for the proponent of expert evidence to have to engage in research for every kind of expertise she wishes to offer and that it would be more efficient (for the attorney making the proffer) to leave it to the potential opponent of admission to raise initial doubts and ask for a *Daubert* hearing for those experts and expertises about which there are doubts. From the court's viewpoint, of course, this is anything but practical and efficient.

For example, consider the situation of a treating physician who believes sincerely that his patient's cancer is caused by a chemical made by the defendant, but no research has ever been conducted showing general causation between the chemical and the disease. The physician ought to know enough about science, and about the literature on this condition, to know the grounds for asserting this cause-effect relationship do not exist. But his belief is nevertheless sincere.²¹ Or, to take another example, suppose the asserted expert is performing a task that is said to be based on sound science, but the expert is only a technician who follows the field's cookbook procedures and has no knowledge or understanding of the underlying science. And suppose that any scientist, and any properly informed court, would conclude that the expert has no valid basis for his work or at least no valid basis that is yet known. But the expert does not know this.²² Can the attorney ethically offer the testimony of such an asserted expert to a court? Or does the attorney have an obligation to first find out enough about the underlying science claims to have a good faith belief that what is being offered to the court is valid, as a precondition for making the proffer?

If the attorney is prohibited only from offering false expertise when she knows it to be false, then ignorance is bliss for both the proffered expert and the attorney. Indeed, the attorney would be rewarded for not going to the trouble to learn about the expertise. Then the burden of screening out junk science falls entirely on the opponent of admission and on the court. Furthermore, if the proponent of the expert evidence is a public prosecutor, a greater burden may attach, given the special obligations of prosecutors to pursue truth and not merely to win cases.²³

that the expertise is valid, and that can only be done competently if the attorney has taken the time and effort to learn about the asserted expertise. Also, because the attorney as proponent of the expert evidence has the burden of persuading the court that it meets the admissibility requirements, she cannot say that the obligation to figure out what is valid and what is not rests primarily on the court.

²¹The witness might think: the necessary research may not have been done yet to prove it, but if and when it is conducted I am sure it will bear out my faith and my intuition.

²²The clearest illustration of such a non-expertise is that of handwriting identification. *See, e.g.,* United States v. Starzecpyzel, 880 F.Supp. 1027 (S.D.N.Y. 1995); United States v. Hines, 55 F.Supp.2d 62 (D.Mass. 1999); United States v. Saelee (2001 WL 1078140).

²³The prosecutor must scrupulously avoid misleading the court or the jury as to the evidence, and may be disciplined for knowingly offering false evidence, failing to withdraw it upon discovering its falsity, or bringing evidence before the court without a good faith belief in its admissibility. *See* MODEL RULES OF PROF'L CONDUCT R. 3.3(a)(1), DR 7-102(A)(4), (5) (1998); MODEL CODE OF PROF'L RESPONSIBILITY R. 3.4(e), DR 7-106(C)(1) (1981); ABA STANDARDS FOR CRIMINAL JUSTICE, PROSECUTION FUNCTION, Standards 3-5.6, 3-5.8 (3d ed. 1993).

C. *What Foundation is Necessary for an Ethical Proffer of Asserted Expertise?*

If a good faith belief is ethically required, what would constitute sufficient grounds for a good faith belief? Clearly something more would be required than reliance on the expert's assertions about his field and himself. Otherwise, lawyers could properly offer astrologers to courts. Is it enough for the lawyer to accept the popular culture's belief about the existence and nature of the expertise, and offer conclusions resulting from the application of the field's supposed principles? If so, astrology still could properly be offered. Is it enough for the lawyer to not *know* that the expert is not an expert or that the expertise is not valid? Or, in the realm of expert evidence, does the sponsoring attorney have a duty to the court to find out?²⁴

If what is ethically required is a reasonable good faith belief, it seems inescapable that the attorney could not use a shortcut or proxy test, but would have to at least ask herself: Do I know enough about this subject so that if it were challenged under *Daubert* I could make a well-grounded showing that, at least on current knowledge, it satisfies the relevant validity criteria?²⁵

Handwriting identification expert testimony is an apt area for exploring answers to the ethical questions posed above. Its practitioners are said to be technicians who cannot be expected to know much about the underlying science.²⁶ Moreover, there is a severe lack of underlying science. There are few if any cases in which *Daubert* challenges to handwriting expertise did not result in judicial declarations that the

²⁴An infamous forensic dentist from Mississippi invented techniques that were never tested, which he could not document, which he alone could perform, and which went beyond the domain of bitemark impressions. More than this, in his opinions he exaggerated the certainty of the conclusions that any of his techniques—including conventional bitemark analysis—could produce (by habitually declaring his conclusions to be, “indeed and without doubt”). As a result, several of the professional associations to which he belonged denounced him and suspended or terminated his membership, though not before his testimony led to convictions of persons later determined to be actually innocent. Did the prosecutors who put him on the stand have no independent professional obligation to ascertain that his investigative inventions and his testimony were valid? (After he was exposed, he continued to be used as an expert witness. Did those prosecutors have an additional burden to insure that he was not offering junk science to the courts, or could they take his word for it that he was not?) Another infamous forensic scientist, Fred Zane of West Virginia, was renowned for coming up with the answers that investigators and prosecutors wanted for their cases, mostly by making up the results of tests never performed. Did the prosecutors who used his work have any obligation to insure the validity of what he was offering beyond taking him at his word? His “work” was so greatly appreciated that after he was exposed and fired and fled to another state, West Virginia law enforcement officials continued to send cases to him for his reports and opinions. For details on these and many other instances of fraud by expert witnesses, see Giannelli, *supra* note 15.

²⁵In *United States v. McVeigh*, 1997 WL 47724 (D.Colo., Transcript, 1997) (Oklahoma City Bombing Case), the Government decided not to offer a handwriting expert witness on the basis that such a proffer likely would not pass muster in the *Daubert* hearing that would have been required. Another assistant U.S. attorney, who said that he had been prosecuting cases for twenty-five years, approached the author at a federal judicial conference and stated that he no longer offers handwriting experts at trial because he believes they lack sufficient foundation to justify their testimony.

²⁶See Andre M. Moenssens, *Handwriting Identification Evidence in the Post-Daubert World*, 66 UMKC L. REV. 251 (1998).

field lacked a valid scientific basis. These rulings also often place limits of one kind or another on the testimony of handwriting experts.²⁷ Yet apparently the examiners' personal faith in the validity of what they do was, and remains, heartfelt—even after the field's weaknesses have been exposed and judged. Did the attorneys²⁸ who offered handwriting expert evidence have an ethical obligation to look below the surface, to make sure they were not offering false or misleading evidence to the courts, or was it permissible for them to continue offering such experts until the courts stopped them?²⁹

Once challenges were made, presumably the proponents offered the courts the best case they could for continued admission. But what happens after some number of courts have considered the challenges and routinely rejected claims of handwriting expertise? What then is the obligation of subsequent proponents? At what point, if any, do attorneys, especially prosecutors, have an ethical duty to independently evaluate the validity of handwriting expertise, and continue to offer it only if they reach a considered judgment that it is valid and that they can make a sound case to a court that it ought to be admitted?³⁰ Or may they ethically continue to offer it even though they cannot defend its claims of validity to themselves or to courts with anything but the flimsiest of scientific support or none at all?³¹

D. *Is There a Duty to Divulge the Weaknesses of the Science One Proffers?*

If an attorney does, for whatever reason, offer dubious expertise to a court, what are the proponent's obligations to opposing counsel and to the court? Is there a duty to disclose known weaknesses of the science or the cases that have considered and rejected, to one degree or another, the claims of the proffered field?

²⁷See D. Michael Risinger, *Handwriting Identification*, in MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY § 28-1.4 (David Faigman, David Kaye, Michael Saks & Joseph Sanders eds., 2d ed. 2002).

²⁸Presumably, if there is such a duty to offer only valid evidence to the court, the duty falls more heavily on criminal prosecutors than on lawyers offering such expertise in civil cases. It is, however, hard to see why it would make a difference on what is an implicit motion to admit an expertise on the grounds that it satisfies the requirements of *Daubert*.

²⁹This becomes relevant with respect to other forensic sciences that share similar weaknesses with asserted handwriting identification expertise. What, if any, independent obligation do the proponents of such evidence have following *Daubert* and *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999)? Or is it ethically proper for them to continue offering the evidence whether or not they have satisfied themselves about its validity?

³⁰See *supra* note 25.

³¹If the reader examines the offerings of the proponents of handwriting experts in the cases cited at *supra* note 22, the reader will be astonished at how little the proponents could offer on its behalf. Assistant U.S. Attorney Orenstein, whose decision it was in *United States v. McVeigh* that handwriting expert evidence was unlikely to pass a *Daubert* test, has indicated that despite a lack of empirical evidence supporting the claims of forensic handwriting experts, he believes in them anyway. See J. Orenstein, *Effect of the Daubert Decision on Document Examination From the Prosecutor's Perspective*, 1 FORENSIC SCIENCE COMMUNICATIONS (1999), at www.fbi.gov/programs/lab/fsc/backissu/oct1999/abstrcte.htm.

The answer may depend upon whether the scientific material in question constitutes adjudicative facts or legislative facts.³² Understanding these legal concepts requires the reader to have some understanding of the nature of scientific knowledge. Scientific knowledge can be viewed as existing at several levels of abstraction, but it will suffice to consider two. At a high level of abstraction are the trans-situational principles, relationships, theories, hypotheses, and so on of the field. These constitute the general knowledge of the field. They will be true across cases and across jurisdictions. They are the sorts of facts that in appropriate cases can become legislative facts. At a low level of abstraction are the case-specific facts to which the principles of the science are applied and the case-specific conclusions which emerge from that application. They are true for the case at bar but not for other cases involving other parties and other case facts. They are among the adjudicative facts of a case.³³

There is no debate about the scientific facts that occupy the lower level of abstraction. They are like any other case-specific, adjudicative facts, and there is no reason why the usual rules of procedure, professional responsibility, and due process should not determine the circumstances under which they must be made known to opposing counsel or to the court and when they may be withheld.³⁴

If the scientific facts at the higher level of abstraction also are properly thought to be adjudicative facts,³⁵ then the above answer is the same for them. For criminal prosecutors, this probably means that the weaknesses of the proffered science need to be disclosed. If the facts (as to the shakiness of the science) are material to identifying the defendant as the perpetrator and they tend to weaken the identification and negate guilt, then they are adjudicative facts which tend to exculpate and must be disclosed.³⁶

But the more coherent analysis is that these trans-case facts, if adopted by a court as part of a ruling on the admission or exclusion of a specie of evidence and having precedential effect, constitute legislative facts. And if they are legislative facts, then they are usually treated as the law is treated.³⁷ And if they are treated as law is treated, then they probably must be disclosed on the same terms that other adverse legal authority must be made known to a court.³⁸ While the duty of disclosure of

³² For a discussion of the differences between adjudicative and legislative facts and their implications, see Advisory Committee's Comments to FED. R. EVID. 201. See also John Monahan & Laurens Walker, *Social Authority: Obtaining, Evaluating, and Establishing Social Science in Law*, 134 U. PA. L. REV. 477 (1986).

³³ For a more detailed discussion, see the comments on *General Electric Co. v. Joiner*, 522 U.S. 136 (1997), in *Saks*, *supra* note 5.

³⁴ This is reflected in ABA Model Rules of Professional Conduct 3.8 and DR 7-103, which prohibit the prosecutor from instituting charges not known to be supported by probable cause, and which require the disclosure of evidence to the defense that negates guilt or mitigates the offense. See also *Brady v. Maryland*, 373 U.S. 83 (1963); *United States v. Bagley*, 473 U.S. 667 (1985).

³⁵ Which seems to be at least the tentative inference to be drawn from the *Joiner* decision.

³⁶ See *supra* note 34.

³⁷ Monahan & Walker, *supra* note 32.

adjudicative facts falls most heavily on prosecutors, the duty to disclose adverse legal authority falls on both sides of both civil and criminal cases.

E. The Obligations of Counsel Representing the Party Against Whom the Scientific Evidence Is Offered

Notwithstanding the duties of disclosure by the proponent of expert evidence, the party against whom the expert evidence is to be offered cannot, as a practical matter, rely on the proponent's compliance with those obligations. This is not to impugn the honesty of the proponents of scientific evidence; most of them have simply not thought about the problem and the obligations that become evident once the problem is considered. Consequently, opposing counsel has little choice but to be at least as alert and informed about the proffered science as the party proffering it.

As to the scientific expert witness himself, opposing counsel has no practical option other than to assume the worst and prepare for the worst. To assume the worst means to assume the expert is an advocate in witness clothing, having inadequate understanding of the methods employed and findings reached, and to prepare for cross-examination accordingly. With expert witnesses the examination and cross-examination can be and should be of a high degree of substance, because the scientific expert witness's testimony is supposed to be about scientific substance, not credibility or opportunity to observe.

The ethical questions for the lawyers are also about substance. If there is scientific evidence that would help a party's claim or defense, counsel ought to find out about it and offer it. Failure to do so is a failure to provide competent representation.³⁹ Does counsel adverse to expert testimony which is offered have an ethical duty to challenge the admission of the evidence and (if it is admitted) the weight of the evidence? Surely competent representation⁴⁰ means that the weaknesses in evidence offered against one's client should be brought to light (unless there is some tactical reason for letting them go). Those who fail most often in this regard appear to be criminal defense lawyers. In a recent extensive review of published cases for several years preceding and following *Daubert*, Risinger found, for example, that out of 90 state court opinions in which handwriting identification evidence was proffered, there was not a single challenge to the admissibility of the forensic handwriting examiners.⁴¹

³⁸The Code of Professional Responsibility and the Rules of Professional Conduct require a lawyer to disclose legal authority "in the controlling jurisdiction" known to be "directly adverse" to the position of the client and which is not disclosed by opposing counsel. MODEL CODE OF PROF'L RESPONSIBILITY R. 7-106(B)(1) (1981); MODEL RULES OF PROF'L CONDUCT R. 3.3(a)(3) (1998). Whether legislative facts that are integral to a holding are disclosable in the same way that the holding is has not, to my knowledge, been considered yet by any court.

³⁹MODEL RULES OF PROF'L CONDUCT R. 1.1 (1999) (*see* Comment 5, Thoroughness and Preparation, which "includes inquiry into and analysis of the factual . . . elements of the problem").

⁴⁰*Id.*

⁴¹*Supra* note 4.

III. THE WORKING RELATIONSHIP OF LAWYERS AND EXPERTS

What goes on outside the courtroom, before the trial, provides insight into the role the law has created for expert witnesses. Most of the contact between experts and legal actors goes on outside of the purview of the court, and the great majority of cases never reach trial. What goes on in the pre-trial phase is controlled far less by rules than the trial is and more by informal practices. The pretrial phase may tell us something about the structure of the legal process and may reveal its underlying norms in ways that a look at the trial does not. As we shall see, in terms of the messages sent to experts about what is expected of them, the black-letter rules of trial and the informal processes of pre-trial are at war with each other, sometimes trapping expert witnesses in the cross-fire.

The first thing to notice is that the selection and preparation of experts is by the parties. Whereas fact witnesses are limited to those who have observed the events at issue in a case, expert witnesses come from a pool that is virtually unlimited. Lawyers in civil cases quite properly seek experts whose testimony will be favorable to their clients. If they think a preliminary choice unwise, they can dismiss that expert and hire a new one or several new ones. On the other hand, shopping for experts is given as one of the reasons for judicial counter-measures such as Fed. R. Evid. 706.⁴² In criminal cases, prosecutors are procedurally obligated to make known to the defense, upon request, the findings of scientific examinations,⁴³ and are constitutionally obligated to inform the defense of all exculpatory evidence.⁴⁴ The disclosure obligations of the defense vary across jurisdictions. Under the Federal Rules, they are reciprocal: if the defense makes a disclosure request of the Government, the defense obligates itself to share complementary data with the Government.⁴⁵

In civil cases, or in jurisdictions where criminal defense counsel are more free to choose experts and shelter their pre-trial opinions from disclosure, does it create an ethical problem if counsel searches for an expert who agrees with the client's position? At one extreme, surely it would be ethically troubling if counsel selected experts at random, without regard to what they had to say on the issue at hand. At the other extreme, it seems ethically dubious for counsel to search diligently, discarding dozens of experts until the rare one is found who happens to agree with the lawyer's theory of the case. What lines might be drawn between these two extremes? Can lines be drawn?

⁴²"The practice of shopping for experts" is listed as being among "matters of deep concern." Advisory Committee's Comments to FED. R. EVID. 706.

⁴³FED. R. CRIM. P. 16(a)(1)(D) states:

Reports of Examinations and Tests. Upon request of a defendant the government shall permit the defendant to inspect and copy or photograph any results or reports of physical or mental examinations, and of scientific tests or experiments, or copies thereof, which are within the possession, custody, or control of the government, the existence of which is known, or by the exercise of due diligence may become known, to the attorney for the government, and which are material to the preparation of the defense or are intended for use by the government as evidence in chief at the trial.

⁴⁴See *supra* note 34.

⁴⁵See FED. R. CRIM. P. 16(b)(1)(B).

Once suitable experts are selected, a competent lawyer will set about to secure their loyalty and cooperation. Experts learn much of what they know of the trial and (over time) of the law from this teacher with a very particular agenda.⁴⁶ Lawyers are, after all, professional persuaders and negotiators; they do not reserve those skills for use in the courtroom. Especially in civil cases, and to a lesser extent in criminal cases, lawyers introduce experts to the facts of the case and inform them of what is at issue. From this lawyer, in a more or less subtle way, the experts will learn of the righteousness of the client on whose side they have been recruited to testify. What the expert is or is not comfortable testifying to at trial is determined in advance and, if necessary, is “negotiated” between expert and attorney.

On the one hand, it seems reasonable and perhaps necessary for the attorney to determine the extent to which the expert’s knowledge and opinions will support the attorney’s theory of the case. It is necessary for the expert to draw the line and not go where reasonable inferences from the field’s principles will not allow. If the positions presented later are too far out on a limb, is it the fault of the attorney who invited the expert to testify, or of the expert? Sometimes the “negotiation” between counsel and the expert boils down to what language is to be used to describe the expert’s opinion. The attorney is looking for language that will be most helpful to the closing argument she wishes to make, while the cooperative, yet by no means dishonest, expert is looking for language that will allow him to feel that he did not lie or misrepresent his opinion.⁴⁷

In a world of powerful subtleties, why even consider money? But the law does. The law prohibits the payment of expert witnesses to be contingent upon the outcome of the case. Yet in a civil case experts may understand that sometimes, unless the outcome is favorable, there may be inadequate money to pay the experts (especially if called on behalf of the plaintiff), or that future employment of the expert may depend on helping with a successful outcome in the present case. The latter is more or less true for all experts who are engaged on an ad hoc basis by all sides of all cases.

What would we think if a law firm that specialized in representing tort plaintiffs had at its disposal a firm of varied experts who worked exclusively for tort plaintiffs; made their incomes exclusively from the work they did for plaintiff’s lawyers; and their salaries, vacation schedules, working conditions, and careers depended on the evaluations they received on the work they did for these attorneys? And imagine that this firm of varied experts was the exclusive employer of some kinds of experts, so that defendants in these tort cases had no experts available to them. Does this scenario raise any ethical issues about either the experts or the attorneys using these

⁴⁶Imagine how different the expert’s education would be if it were provided by a judge or a law teacher or a lawyer hired by experts for experts.

⁴⁷One example of such language negotiation is provided by the prosecutor and the ballistics expert in the case of Sacco and Vanzetti. The firearms expert initially concluded that because his tests were not conclusive, they did not confirm that the defendant’s weapon was the murder weapon. But the prosecutor negotiated the expert’s testimony into an equivalent yet very different-sounding version: that the ballistics findings were not inconsistent with a theory that the murder bullets came from the defendant’s gun. The defense was afraid to try to dissect this testimony, thinking that to do so unsuccessfully would put the defense in an even worse position. L. JOUGHIN & E.M. MORGAN, *THE LEGACY OF SACCO AND VANZETTI* (1976).

experts? With a few small adjustments to the scenario, this fairly well describes our system of expert witnesses available in the prosecution of criminal cases.⁴⁸

IV. DISCOVERY

A. *In Civil Cases*

The Federal Rules of Civil Procedure reflect a dual concern about trials. On the one hand, the more each side knows about the evidence the other side is going to present, the more a trial will be a contest over the meaning of that evidence and the less it will be a “trial by ambush.” On the other hand, the system is adversarial, and the parties are encouraged to seek out information and views beneficial to themselves, to prepare their cases independently, and not to free ride on the other side’s efforts.⁴⁹ The rules seek to protect both of these interests by making witnesses and other evidence subject to disclosure—today even imposing a duty of voluntary disclosure—but barring access by each side to the other side’s theories and strategy. Thus, the rules of discovery are expansive, generally limited only by whether the information sought is “relevant” to the subject matter of the lawsuit and whether the information is protected by a privilege. Both sides can make pre-trial inquiries of the other side’s witnesses.

Discovery is, therefore, limited by the attorney work-product doctrine.⁵⁰ But in addition to legitimate work-product protection, lawyers often try to insulate their experts and their communications with their experts from discovery, asserting or implying that the expert is covered by the doctrine. The work-product doctrine has been stated in this language: “In ordering discovery . . . the court shall protect against disclosure of the mental impressions, conclusions, opinions, or legal theories of an

⁴⁸It might be noted that a few crime laboratories in the United States are deliberately organized so that they are not answerable to police or prosecutors, but their funding and governance have been arranged so as to keep them more independent.

⁴⁹See Federal Rules of Civil Procedure, Advisory Committee Comments to 1970 Amendments (“Past judicial restrictions on discovery of an adversary’s expert, particularly as to his opinions, reflect the fear that one side will benefit unduly from the other’s better preparation. The procedure established in subsection (b)(4)(A) holds the risk to a minimum. Discovery is limited to trial witnesses, and may be obtained only at a time when the parties know who their expert witnesses will be. A party must as a practical matter prepare his own case in advance of that time, for he can hardly hope to build his case out of his opponent’s experts.”). See also Scalia, J., dissenting from adoption of amendments to Federal Rules of Civil Procedure, 1993, 146 F.R.D. 507, 511 (“The proposed new regime does not fit comfortably within the American judicial system, which relies on adversarial litigation to develop the facts before a neutral decisionmaker. By placing upon lawyers the obligation to disclose information damaging to their clients – on their own initiative, and in a context where the lines between what must be disclosed and what need not be disclosed are not clear but require the exercise of considerable judgment – the new Rule would place intolerable strain upon lawyers’ ethical duty to represent their clients and not to assist the opposing side. Requiring a lawyer to make a judgment as to what information is ‘relevant to disputed facts’ plainly requires him to use his professional skills in the service of the adversary.”).

⁵⁰Reflected in FED. R. CRIM. P. 16(a)(2), 16(b)(2) and FED. R. CIV. P. 26(b)(3). See also *Hickman v. Taylor*, 329 U.S. 495 (1947) (the seminal case on the work product doctrine).

attorney or other representative of a party concerning the litigation.”⁵¹ Examples of “other representatives” given by the drafters of the rule are private investigators and insurance claim agents.⁵²

There are at least two reasons to think that the phrase “other representative” does not include expert witnesses, and therefore what expert witnesses think or write is not attorney work product. First of all, the phrase certainly does not include fact witnesses. Second, additional civil rules were developed specifically to regulate discovery from experts, which implies that experts are not included within the scope of “other representatives.” Discovery from experts is divided into two parts. The first pertains to expert witnesses and the second to nonwitness experts.

Concerning testifying expert witnesses, Fed. R. Civ. P. 26(b)(4)(A) states: “A party may depose any person who has been identified as an expert whose opinions may be presented at trial. If a report from the expert is required . . . the deposition shall not be conducted until after the report is provided.”⁵³ That seems to leave little to secrecy. And the reasoning behind the rule removes all doubt.⁵⁴ By the lights of the black-letter law, expert witnesses expected to testify are witnesses and their knowledge, before trial as well as during, is not shielded in the way that the knowledge of the advocate is. The knowledge and opinions of consulting, non-testifying experts, on the other hand, are not subject to disclosure.

B. In Criminal Cases

The rules of criminal procedure reflect still other concerns and a different balance to accommodate those concerns. These concerns include protection of a defendant’s

⁵¹FED. R. CIV. P. 26(b)(3).

⁵²*See also Hickman*, 329 U.S. at 495.

⁵³This is greater access than provided by the predecessor version of this rule:

A party may through interrogatories require any other party to identify each person whom the other party expects to call as an expert witness at trial, to state the subject matter on which the expert is expected to testify, and to state the substance of the facts and opinions to which the expert is expected to testify and a summary of the grounds for each opinion. Upon motion, the court may order further discovery by other means.

⁵⁴Advisory Committee’s Notes to FED. R. CIV. P. 26:

Many . . . cases present intricate and difficult issues as to which expert testimony is likely to be determinative....

[A] prohibition against discovery of information held by expert witnesses produces in acute form the very evils that discovery has been created to prevent....

Effective rebuttal requires advance knowledge of the line of testimony of the other side. If the latter is foreclosed by a rule against discovery, then the narrowing of issues and elimination of surprise which discovery normally produces are frustrated....

These considerations appear to account for the broadening of discovery against experts in the cases cited. . . . In some instances, the opinions are explicit in relating expanded discovery to improved cross-examination and rebuttal at trial....

These new provisions . . . repudiate the few decisions that have held an expert’s information privileged simply because of his [or her] status as an expert....They also reject as ill-considered the decisions which have sought to bring expert opinion within the work-product doctrine.

constitutional right against disclosing anything that might be incriminating, concern that criminal defendants who learn the details of the case against them will combat that evidence with false testimony⁵⁵ or threaten witnesses with harm, and awareness of the imbalance of knowledge in criminal cases: the prosecution has most of the evidence and the rules reflect a wariness of giving too much of it to the defense so as to prepare its challenges to that evidence. One solution found in the federal rules is a process of defense-controlled, tit-for-tat, reciprocal exchange of information.⁵⁶ Whenever the defense seeks discovery of certain prosecution evidence (statements by the defendant, tangible evidence, and scientific tests), the prosecution is entitled to obtain comparable information from the defense.⁵⁷ Neither side is permitted to make pre-trial inquiries of the witnesses of the other side.

Thus, the rules of criminal procedure shield more evidence from discovery than the civil rules do. And yet, they single out much of the information supplied by experts to be made the most accessible.⁵⁸

Whether for reasons of overwork or to stymie the defense, government experts tend to produce reports that present minimal information about their conclusions and the bases for those conclusions. Thus, the law's goal of forcing the exchange of critical information to facilitate trial preparation is frustrated by experts producing reports calculated to offer little help to the defense's trial preparation. In an investigation of questionable practices at the FBI Crime Laboratory, the Inspector General of the U.S. Department of Justice found that some forensic scientists would "spruce up" lab notes (enlarge, embellish and change them) as the case approached trial.⁵⁹ Some of the embellishment was calculated to make the expert's conclusions be more consistent with other evidence in the trial. In addition to frustrating the goals of the law, this is poor scientific practice.

V. CONCLUSION

This article has reviewed an array of ethical issues affecting the relationship of expert witnesses with lawyers and courts, especially in the criminal justice system. Changes in the law governing the admissibility of expert testimony, and growing societal concerns about flaws in the criminal trial that permit innocent people to be

⁵⁵By contrast, our Colonial forebears gave us a system in which all parties were presumed to be so incapable of being truthful witnesses that they simply were not permitted to testify. *See, e.g.,* *Respublica v. Keating*, 1 U.S. (Dallas) 110 (1784). More generally, *see* JOHN H. WIGMORE, 2 *EVIDENCE IN TRIALS AT COMMON LAW* § 577, 817 (James H. Chadbourne rev. 1979).

⁵⁶At least forty states have statutes governing discovery in criminal cases, and most of these are modeled after the federal rule. But a considerable amount of variation exists as to whether any particular category of information is something the defendant is entitled to as a matter of right, or whether it is controlled by judicial discretion, or whether discovery of the information is precluded.

⁵⁷*See* FED. R. CRIM. P. 16(a)(1)(D), 16(b)(1)(B).

⁵⁸Though not as accessible as in civil cases. And yet, though the rules make no provision for any pre-trial inquiry of the other side's experts, other than a written summary, more expansive and interactive disclosure sometimes is worked out informally by the parties themselves.

⁵⁹*See* UNITED STATES DEPARTMENT OF JUSTICE, *supra* note 15.

convicted, have inevitably changed the responsibilities of both proponents and opponents of expert evidence in criminal trials, so far without much awareness of these changes by the lawyers themselves. The familiar tension between the ethical obligations of attorneys and their motivation to win their cases faces new strains in the arena of expert witnesses.